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THE SPIDER GENUS *COLEOSOMA* (ARANEAE, THERIDIIDAE)

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This paper is one of a series describing American spiders of the family Theridiidae and redefining theridiid genera. The late Miss Elizabeth Bryant revised the genus *Colcosoma* (1944, Psyche, vol. 51, pp. 51-58), and my paper is intended to complement hers by re-illustrating the species and giving their distributions.

I should like to thank Dr. W. J. Gertsch of the American Museum of Natural History, Dr. R. V. Chamberlin, University of Utah, and Dr. A. M. Chickering, Albion College, for making collections available to me. The work was done with the help of a National Institutes of Health grant (E-1944). A National Science Foundation grant (G-4317) made possible the examination of types in European museums. I extend my thanks also to Prof. G. C. Varley for his hospitality at Oxford University, and to Prof. T. Jaczewski and A. Riedel of the Polish Academy of Sciences, Warsaw, for the loan of valuable specimens.

COLEOSOMA O. P. Cambridge

Colcosoma O. P. Cambridge, 1882, Proc. Zool. Soc. London, p. 426. Type species by monotypy: *Colcosoma blandum* O. P. Cambridge.

Small (less than 3 mm. total length) theridiid spiders. Eyes very small, eyes of posterior row one to two diameters apart. Clypeus projecting. Chelicerae without teeth on anterior margin or with one tooth. First leg longest; in females fourth leg next in length, in male second leg. Tarsal comb present but indistinct. Abdomen sometimes modified in female (Fig. 6), always modified in male. Colulus absent.

Epigynum very weakly sclerotized, openings indistinct, quite variable. Palpus with a functional median apophysis (M in Fig. 16); a sclerotized radix (R), a weakly sclerotized conductor (C) and a thread-shaped embolus (E).

The males of *Coleosoma* have a sclerotized ring around the anterior of the abdomen; the ring continues as a ventral shield and has a pair of lobes on the dorsum (Figs. 4, 9, 10, 15). In some species the abdomen may be constricted (Figs. 9, 10). These characters separate the males of *Coleosoma* from both *Chryso* and *Theridion*. Unfortunately I know of no way to separate females from *Theridion*. *Coleosoma* is not close to *Lithyphantes* [= *Steatoda*] as Miss Bryant thought.

Simon incorrectly synonymized *Coleosoma* with *Theridion*, causing confusion. The catalogers, Petrunkevitch, Roewer, and Bonnet, have unfortunately followed Simon.

It is of interest that although the few species known to belong to *Colcosoma* are very closely related, and the males are difficult to separate, the species *C. floridanum* has the epigynum (Fig. 14) and internal genitalia (Fig. 13) entirely different from the other two. While *C. acutiventer* and *C. normale* have similar genitalia in the female as well as in the male, they differ greatly in the abdominal shape of the female. The abdominal shape is usually very conservative and often a good generic character in Theridiidae. This situation emphasizes the importance of having both males and females for correct generic placement, and of using more than one character for generic diagnosis.

Besides *C. blandum* of Ceylon, there are three additional species known, all occurring in America. One of these, *C. floridanum*, is cosmopolitan and has been given numerous names.

As Miss Bryant (1944) made adequate descriptions of species, this has been omitted here.

Key to American Species of *Colcosoma*

Males

- | | |
|--|--------------------|
| 1a. Abdomen with a distinct median constriction (Figs. 9, 10). Palpal embolus of median length (Fig. 11) | <i>acutiventer</i> |
| 1b. Abdomen without median constriction (Figs. 4, 15) | 2 |
| 2a. Palpus narrow, embolus short, radix projecting (Fig. 17) | <i>floridanum</i> |
| 2b. Palpus wide, embolus long, radix not projecting (Fig. 5) | <i>normale</i> |

Females

- 1a. Abdomen with an extension beyond the spinnerets, all dark gray or dorsum dark gray in color (Fig. 6)..... *acutiventer*
 1b. Abdomen shape not modified, usually light in color except for dorsal stripes 2
 2a. Epigynum an indistinct white transverse depression divided into three portions (Fig. 14)..... *floridanum*
 2b. Epigynum with two indistinct longitudinal marks (Fig. 3).... *normale*

COLEOSOMA BLANDUM O. P. Cambridge

Fig. 18

Coleosoma blandum O. P. Cambridge, 1882, Proc. Zool. Soc. London, p. 427, pl. 29, fig. 3. ♂ type from Ceylon, in the Hope Department of Entomology, Oxford University, examined.

Theridion vituberabile Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 210. New name for *Coleosoma blandum* thought to be preoccupied by *Theridion blandum* Hentz.

This species is known only from the type specimen.

COLEOSOMA NORMALE Bryant

Figures 1-5; Map 1

Coleosoma normale Bryant, 1944, Psyche, vol. 51, p. 56, figs. 2, 5, 8, 10, ♀, ♂. ♂ type from Fort Myers, Florida, in the Museum of Comparative Zoology, examined.

The embolus of a male from Arizona is shorter than that from Florida specimens.

Habits. On shrubs; in dune grass (North Carolina).

Records. *North Carolina.* Carteret Co.: Bogue Bank (R. D. Barnes); Beaufort (R. D. Barnes); Carrot Isl. (R. D. Barnes). *Florida.* Alachua Co. (H. K. Wallace). Dade Co.: Kendall (A. M. Nadler). Highlands Co.: 3 mi. S. of Lk. Istokpoga (A. M. Nadler). Indian River Co.: Sebastian (G. Nelson). Pinellas Co.: Pass-a-Grille (A. M. Nadler). Sarasota Co.: Miakka Riv. State Pk. (W. J. Gertsch). *Arizona.* Virgin Narrows (W. Ivie). Yuma Co.: Mittry Lk. (V. Roth). *Mexico.* *Colima:* Cuyutlan (F. Bonet). *Nayarit:* San Blas (C. and M. Goodnight). *Puebla:* Tlacotepec (V. Roth, W. J. Gertsch). *Guerrero:* Acapulco (L. I. Davis). *British West Indies:* Great Bahama Isl., Pine Ridge (E. B. Hayden); South Bimini (A. M. Nadler). *Venezuela:* Rancho Grande (A. M. Nadler).

COLEOSOMA ACUTIVENTER (Keyserling)

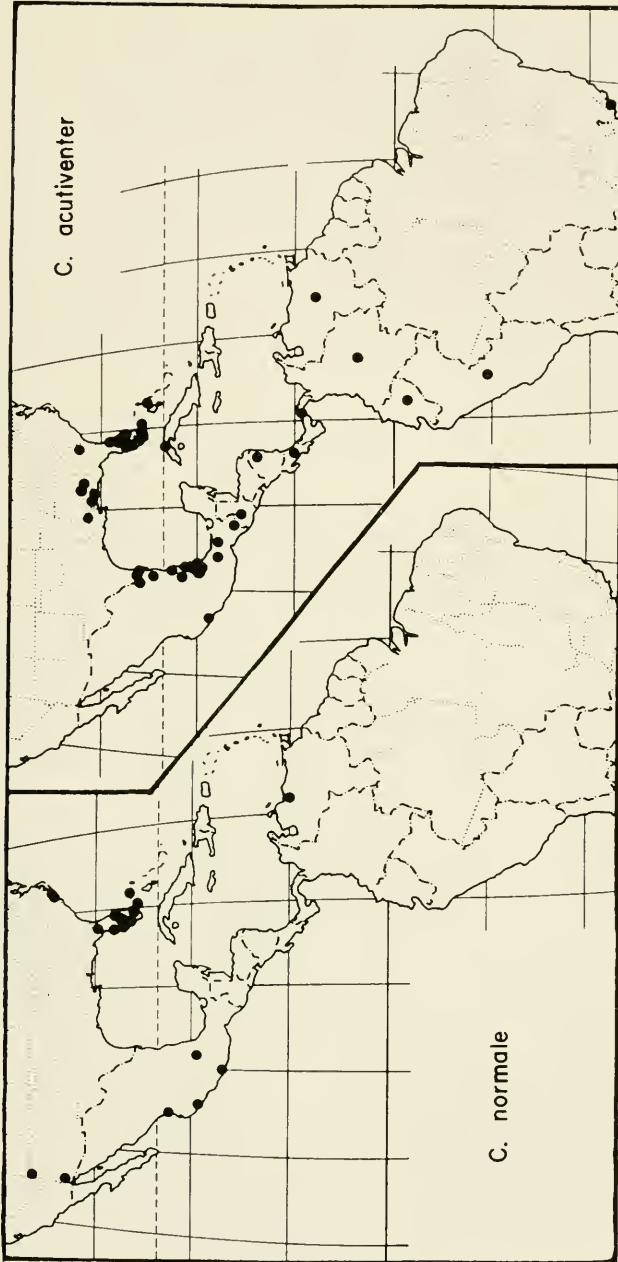
Figures 6-11; Map 1

- Achaea acutiventer* Keyserling, 1884, Die Spinnen Amerikas, Theridiidae, pt. 1, p. 113, fig. 74, ♀. ♀ type from "Maragnioe," Peru, in the Polish Academy of Sciences, Warsaw, examined.
- Colcosoma flavipes* O. P. Cambridge, 1895, Biologia Centrali Americana, Araneidea, vol. 1, p. 154, pl. 19, fig. 12, ♂. ♂ syntypes from Teapa [Tabasco, Mexico], in the British Museum, Natural History. Bryant, 1944, Psyche, vol. 51, p. 52, figs. 1, 4, 7, 9, ♀, ♂. NEW SYNONYMY.
- Argyrodes floridana* Banks, 1900, Canadian Ent., vol. 32, p. 98. ♀ syntypes from Punta Gorda, Florida, in the Museum of Comparative Zoology, examined. NEW SYNONYMY. Not *Colcosoma floridana* Banks, 1900, described on same page.
- Chryso nigripalpis* Banks, 1929, Bull. Mus. Comp. Zool., vol. 69, p. 85, figs. 46, 72. ♀ syntypes from Barro Colorado Island, Panama Canal Zone, in the Museum of Comparative Zoology, examined. NEW SYNONYMY.
- Achaea index* Chamberlin and Ivie, 1944, Bull. Univ. Utah, biol. ser., vol. 8, no. 5, p. 36, figs. 87, 105. ♀ type from Brier Creek, 7 mi. north of Sylvania, Georgia, in the American Museum of Natural History.

Archer (1946, Pap. Alabama Mus. Nat. Hist., no. 22, p. 20) reports this species as having been collected from various habitats: sifting leaves from woods and on walls next to roofs in out-houses.

Distribution. Southeastern United States to South America.

Records. *Florida:* Collier Co.: Everglades (A. M. Nadler). Hardee Co.: Oua (W. J. Gertsch). Highlands Co.: nr. Sebring (W. J. Gertsch); Lake Placid (A. M. Nadler). Indian River Co.: Sebastian (G. Nelson). Lee Co.: Ft. Myers (W. B. Barrows). Orange Co.: Orlando (M. Nirenberg). Seminole Co.: Geneva (W. J. Gertsch). Volusia Co.: Deland (Lutz). *Alabama:* (Archer, 1946). Baldwin Co.: Silverhill (G. Nelson). *Mississippi:* Wilkinson Co.: Centreville (A. F. Archer). *Texas:* Cameron Co.: Big Tree Vine Assoc. (L. I. Davis); Harlingen (L. I. Davis); Edinburg (S. Mulaik); nr. Rio Hondo (L. I. Davis); Brownsville (S. Mulaik). *Mexico.* *Tamaulipas:* Tampico (L. I. Davis); nr. Nueva Morelos (A. M. Davis); Reynosa (S. Mulaik); San Fernando (L. I. Davis). *San Luis Potosí:* Tamazunchale (F. Bonet). *Colima:* Las Humedades, Armeria (F. Bonet). *Puebla:* Huauchinango (H. M. Wagner). *Veracruz:* Tecolutla



Map 1. Distribution of *Coleosoma normale* Bryant and *C. acutiventer* (Keyserling).

(H. M. Wagner); Jalapa (J. C. and D. L. Pallister); Orizaba (F. Bonet); Tuxpan (H. M. Wagner). *Oaxaca*: Playa Hati, Río Tonto (H. Wagner). *Chiapas*: Cacahuatán (C. and M. Goodnight). *Guatemala*: Moca (C. and P. Vaurie). *Nicaragua*: Musawas, Waspue River (B. Malkin). *Costa Rica*: Turrialba (F. Schrader). *Panama*: Boquete (A. M. Chickering). *Canal Zone*: Barro Colorado Isl. (very common); Summit; Gatun; Experimental Gardens; Forest Reserve; Pedro Miguel (all A. M. Chickering). *Bahama Isl.*: North Bimini (A. M. Nadler); New Providence Isl. (E. B. Hayden). *Cuba*: nr. Havana. *Venezuela*: "in orchids from Venezuela" (G. Becker). *Colombia*: [no locality]. *Ecuador*: [no locality]. *Brazil*: Rio de Janeiro (H. Sick) (determination doubtful — lacks posterior extension on abdomen).

COLEOSOMA FLORIDANUM Banks

Figures 12-17: Map 2

- Coleosoma floridana* Banks, 1900, Canadian Ent., vol. 32, p. 98. ♂ syntypes from Punta Gorda, Florida, in the Museum of Comparative Zoology, examined. Bryant, 1944, Psyche, vol. 51, p. 54, figs. 3, 6, ♀, ♂.
- Theridion interruptum* Banks, 1908, *ibid.*, vol. 40, p. 205, fig. 9. ♀ type from Miami, Florida, in the Museum of Comparative Zoology, examined.
- Lithyphantex oophorus* Petrunkevitch, 1930, Trans. Connecticut Acad. Sci., vol. 30, p. 170, figs. 8, 9. ♀ type from near Aguas Buenas, Puerto Rico, probably lost. NEW SYNONYMY.
- Theridion debile* Petrunkevitch, 1930, *ibid.*, vol. 30, p. 206, figs. 53-56. ♀ type from near Río Piedras, Puerto Rico, probably lost. NEW SYNONYMY.
- ? *Theridion epicensis* Berland, 1938, Ann. Soc. Ent. France, vol. 107, p. 166, figs. 107-109, ♀. ♀ type from Epi, New Hebrides, in the Muséum Nationale d'Histoire Naturelle, Paris. NEW SYNONYMY.
- Theridion rapanae* Berland, 1942 Oecus. Papers Bernice P. Bishop Mus., vol. 17, no. 1, p. 15, fig. 6, ♀, ♂. ♂ holotype from Rapa, Polynesia, probably in the Bernice P. Bishop Museum. NEW SYNONYMY.
- Theridion alborittatum* Caporinaccio, 1955, Acta Biol. Venezuelica, vol. 1, p. 334, fig. 25. ♀ type from Barcelona, Anzoátegui, Venezuela, in the Caracas Museum, Venezuela, examined. NEW SYNONYMY.
- Theridion aleipata* Marples, 1955, Jour. Linn. Soc. London, vol. 42, p. 483, pl. 58, figs. 9, 13, 19, ♀, ♂. ♀ type from Aleipata, Samoa, probably in the Otago Museum, Dunedin. NEW SYNONYMY.

The type of *Theridion alborittatum* was examined; it is all shrivelled up and difficult to place. Caporinaccio's drawings and

proportions leave no doubt on the synonymy. The internal genitalia are typical.

There are probably numerous synonyms of this widespread common species in the literature; however the poor descriptions of many species of "*Theridion*" make it difficult to synonymize the names without examining the types.

Habits. This species has been found under stem of dead coconut leaf and under a rock (Petrunkevitch, 1930). Its habit of clinging to vegetation facilitates its world-wide distribution with cargo. Archer (1946, Pap. Alabama Mus. Nat. Hist., no. 22, p. 19) reports sifting it from leaf litter.

Distribution. Cosmotropical (Map 2), probably distributed by man. It may be native in America.

Records. *Massachusetts:* On bananas in Cambridge. *New Jersey:* Ramsey (W. J. Gertsch); probably an accidental introduction. *Florida:* Alachua Co.: Gainesville (W. J. Gertsch). Charlotte Co.: Punta Gorda (S. Rounds). Dade Co.: Kendall (A. M. Nadler); Perrine (A. M. Nadler). Monroe Co.: Key West (A. M. Nadler); Stock Isl. *El Salvador:* San Salvador (J. B. Boursot.) *Costa Rica:* [no locality]. *Panama Canal Zone:* La Boca; Pedro Miguel; Corozal (all A. M. Chickering). *Bahama Isl:* North Bimini (A. M. Nadler); South Bimini (C. and P. Vaurie). *Cuba:* Havana (Baker); Soledad (L. G. Worley); Ote. Chirivico (A. F. Archer). *Jamaica:* St. Ann's Bay; Kingston; Discovery Bay; Whitehouse; Holland Bay (all A. M. Nadler). *Haiti:* Trou Caiman (P. J. Darlington); Grand Rivière (W. M. Mann); Diquini (W. M. Mann); Emnery (P. J. Darlington). *Dominican Rep.:* San José de las Matas (P. J. Darlington); Puerto Plata (P. J. Darlington); nr. Ciudad Trujillo (A. M. Nadler); Boca Chica (A. M. Nadler). *Puerto Rico:* El Yunque; Mayaguez; Cidra, Treasure Isl.; Río Piedras (all A. M. Nadler). *Martinique:* Fond la Haye (A. M. Nadler). *Trinidad:* Piareo (A. M. Nadler); Navy Base (R. Ingle). *Venezuela:* [no locality]. *Colombia:* [no locality]. *Peru:* Tingo Maria, 670 m (W. Weyrauch). *Galapagos Isl.:* Floreana. *Togo:* Ho, taken in Wisconsin in package of pressed plants (G. Naomasi). *India:* Taken in Honolulu, Hawaii in imported plants, "on cargo from Calcutta." (T. F. Chong). *New Hebrides:* [no locality] (J. S. Haeger, W. R. Enns).

Figs. 1-5. *Coleosoma normale* Bryant. 1. Female from side. 2. Female genitalia, dorsal view. 3. Epigynum. 4. Male abdomen from side. 5. Left palpus.

Figs. 6-11. *C. acutiventer* (Keyserling). 6. Female from side. 7. Female genitalia, dorsal view. 8. Epigynum. 9. Male abdomen from side. 10. Male, dorsal view. 11. Palpus.

Figs. 12-17. *C. floridanum* Banks. 12. Female abdomen, dorsal view. 13. Female genitalia, dorsal view. 14. Epigynum. 15. Male abdomen from side. 16. Palpus expanded (C, conductor; E, embolus; M, median apophysis; R, radix). 17. Palpus.

Fig. 18. *C. blandum* O. P. Cambridge, palpus.

